DOCUMENT RESUME

ED 244 461 EC 162 474

AUTHOR Kamhi, Alan G.; And Others
TITLE Clinical and Educational Perspectives on Language Intervention for Children with Autism.
PUB DATE Apr 83
NOTE 30p.; In: Meeting Their Needs: Provision of Services to the Severely Emotionally Disturbed and Autistic. p221-248. Conference Proceedings (Memphis, TN, April 27-28, 1983). (EC 162 463).
PUB TYPE Speeches/Conference Papers (150) -- Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Autism; *Communication Skills; Echolalia; Elementary Secondary Education; *Intervention; *Language Acquisition; Nonverbal Learning; Teaching Methods

ABSTRACT

The paper examines aspects of effective language intervention with autistic children. An overview is presented about the nature of language, its perception and comprehension, and the production of speech-language. Assessment strategies are considered. The second part of the paper analyzes traditional and communications-based intervention programs. Reasons for limited success of traditional behavioral intervention programs are cited including failure to consider the social-motivational and cognitive bases of language. The alternative of a communication-based approach is offered which emphasizes training in the natural environment with a focus on developing skills rather than on speech and language communicative skills. Specific language intervention suggestions are given for nonverbal, echolalic, and older autistic children. Goals of traditional and communications-based approaches are contrasted. The final part of the paper examines ways in which language and communication intervention can be accomplished in the classroom. (CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

CLINICAL AND EDUCATIONAL PERSPECTIVES ON LANGUAGE INTERVENTION FOR CHILDREN WITH AUTISM

Alan G. Kamhi, Lauren K. Nelson, and Lacy H. Wray

ED244461

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

BASES OF LANGUAGE INTERVENTION

Perspectives on the Etiology of Autism

The perspective one takes concerning language intervention with the severely emotionally disturbed and autistic depends in large part on the way in which one views the causal bases or etiology of the disorder. In our presentation today, we will consider some of the perspectives that have been used to view autism. We chose to narrow our discussion to the autistic population because the clinical research involving these children is extensive and the difficulties these children present for language intervention are representative of the ones that other severely emotionally disturbed children would present.

Early theories on the etiology of autism saw the disorder as having a psychogenic base which derived from a deviant environment rather than a congenital cognitive or psychosocial disorder. Representative of these theories is Kanner's (Kanner & Eisenberg, 1955) view that the disorder was partially due to lack of affection from the parents -- a psychogenic disorder due to "emotional refrigeration." In the same vein, Bettleheim (1967) considered autism to be a reaction to pathological parental behavior, usually involving the mother. Finally, principles of learning theory and operant conditioning have also been used to explain autism. Ferster (1961) suggested that parents of autistic children have inadvertently reinforced deviant behaviors while failing to reinforce appropriate ones.

In recent years, perspectives on the etiology of autism have stressed the organic bases of the disorder, much to the relief of parents of these children who previously had to suffer the blame for their child's behavioral abnormalities. It is now known (e.g., Rutter, 1979) that autistic behaviors can develop from a number of diverse neuropathological conditions, including

EC 162174

phenylketonuria, congenital rubella, tuberous sclerosis, lead intoxication, and congential syphillis. In a recent review of the relevant literature, Morgan (in press) concludes that it is doubtful that "autism represents any single disease entity or results from any single etiological factor." Consistent with this conclusion, McLean and Snyder-McLean (1978) suggest that there are probably many different and distinct syndromes of autism and these different syndromes are associated with different etiologies.

This change in perspective from "external source theories" to "internal source theories" has led to research which has attempted to delimit the cognitive, linguistic, and social abilities of these children. This research indicates that most autistic children suffer from cognitive, linguistic, and social/motivational deficits. Recently, some investigators (Churchill, 1978; Ricks & Wing, 1975; Rutter, 1979) have concluded that autism represents a severe and pervasive impairment of the higher cognitive functions of symbolic thought and language. Churchill (1978) has gone so far as to argue that language deficits represent the necessary and sufficient cause of those symptoms common to all autistic children. Though the cognitive and linguistic impairment is certainly a central component of the syndrome of autism, these aspects should not be emphasized to the point where the social/motivational deficit is overlooked.

The change in perspective from external to internal source theories has also had a profound impact on the way in which these children's behavioral disorders are assessed and treated. Because the language deficit was now thought to play a central role in the disorder, language specialists necessarily have become a crucial member of the team of professionals involved in habil ating autistic children. In fact, many now believe that circumventing the communication handicap is the single most important task facing

parents and educators who work with autistic children (NSAC Advocate, 1980). DeMyer (1979), based on her clinical experiences with 155 autistic children and their families, found that communication problems were uppermost in the minds of parents and it was to help improve their children's communication that they came to seek professional help.

Unfortunately, recognizing the centrality of the language and cognitive deficits in autistic children has been somewhat easier than deciding what to do about these deficits. Prizant (1982) argues that a major problem in the planning of educational and communication programs for autistic children is that individuals who are not very familiar with language and communication processes are often responsible for planning these programs. Lovaas' (1977) work epitomizes this lack of knowledge, as he attempts to justify his operant approach to language training by stating that "there is a great deal which we do not know as yet about language learning" (p. 4). As Prizant (1982) points out, Lovaas has failed to incorporate into his program what we have learned about language learning and intervention over the past two decades.

In order to develop and implement effective language intervention programs with autistic children, it is necessary to know what language is, how it develops, what factors underlie its development, and how deficits in one or more of these factors (structures/processes) can lead to breakdowns in language. Because speech-language pathologists have received extensive training in these areas, they need to play a major role in assessing and planning strategies for the habilitation of autistic children. Nevertheless, the speech-language pathologist is usually just one member of a team of professionals responsible for the habilitation of these children. The fact that the language deficit is a central component of autism suggests that all who work with the autistic should have some familiarity with language and language-learning processes.

What is Language?

In the remaining time, I would like to address some of these points, beginning with the question, "What is language?" The question is not an easy one to answer because language can take many forms (acoustic, phonetic, syntactic, etc.), express a variety of contents (i.e., different concepts), and serve numerous different functions, not all of which are communicative. Given the complexity of language, it has proven useful to divide language into four domains: phonology, syntax, semantics, and pragmatics. In order to understand and produce language, children must eventually internalize specific rules in each of these four language domains. The process of language development can be thought of as a gradual internalization of these rules of language (phonology, semantics, and syntax) and communication (pragmatics). Briefly, the rules of phonology describe how to put sounds together to form words; the rules of syntax describe how to put words together to form sentences and how to use grammatical markers to indicate tense, aspect, possession and other modulations of meaning; the rules of semantics indicate which words express which concepts and which words can combine with other words; and the rules of pragmatics indicate how to participate in a conversation (i.e., rules for turntaking, making presuppositions, ordering topics, and so forth).

Perception and Comprehension of Language

It has also proven useful to differentiate among the processes of perception, comprehension, and production of language. Figure 1 presents a model of the perception and comprehension of speech and language. In order to understand why a child might not be understanding language, it is important to understand the various places or points where the processing of a message may break down. Let us briefly consider what is involved in perceiving and

Perception and Comprehension of Speech and Language
A Process Model

Alan G. Kamhi
Memphis State University

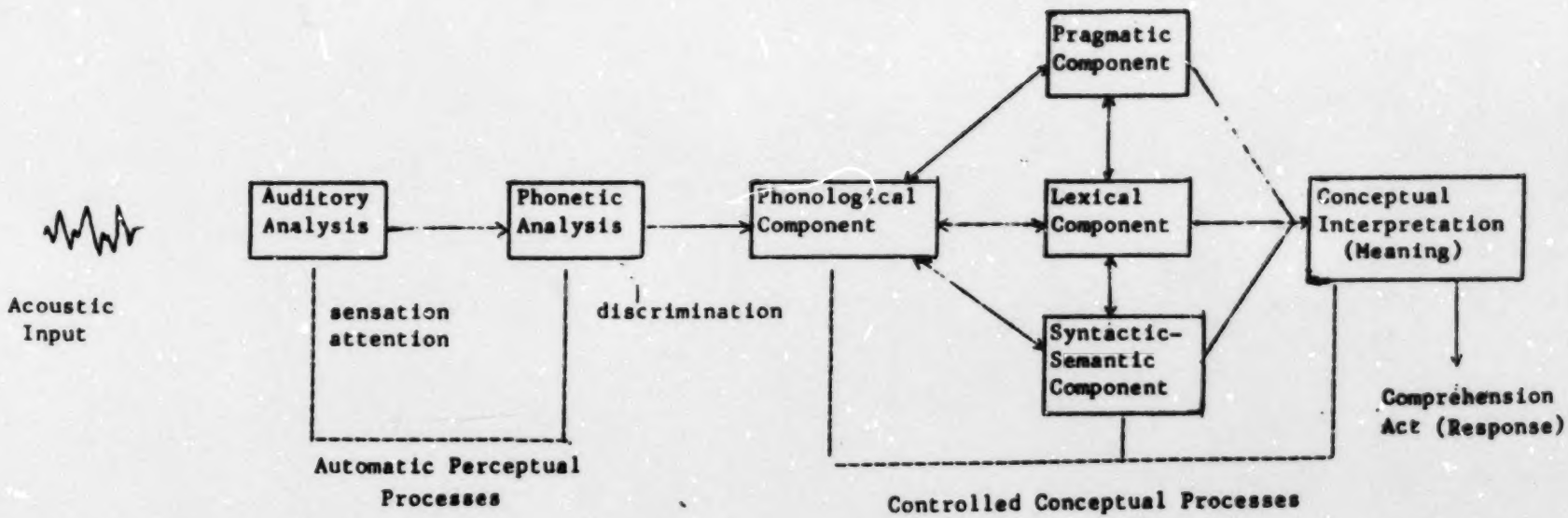

Figure 1

comprehending speech and language. Note that the first box is entitled, "Auditory Analysis." In order to analyze the sounds that make up the speech stream, one has to be able to hear these sounds (sensation) and devote some minimal attention to them. A deaf child will necessarily have difficulty understanding spoken language, whereas a child who does not attend to speech, as many autistic children do not, will also have difficulty understanding speech.

Presuming that some sensory ability is present and the child has attended to the message, the next step is to segment the auditory input into phonetic units. To do this, the individual must be able to discriminate among these phonetic units, a perceptual ability that is influenced by maturational and environmental factors. A deficient environment or delayed maturation of the mechanisms involved in discrimination will lead to problems at this stage. These first two stages are often called, "low-level speech perceptual processes" because they are highly automatic; that is, the sensation and discrimination of speech often occurs below the level of conscious awareness. These low-level stages can be contrasted with the so-called "higher-level" stages of speech perception and comprehension. In these stages, knowledge of the language and knowledge of the world are used to assign meaning to phonetic representations.

Higher-level processes have been shown to play an important role in the perception and comprehension of speech and language. In fact, much of our comprehension of language is thought to occur in what is called "top-down" fashion, whereby listeners use their knowledge of language and the communicative situation to assign meaning to speech.

To illustrate what is meant by a top-down comprehension process, try to reconstruct the last sentence I said. Can you remember more than one or

two words in the sentence? Note how little information you remember about the sounds in the sentence or even the syntactic structure of the sentence. Imagine how difficult it would be, if in order to understand language, you had to process speech from the bottom up, paying attention to sounds, words, syntactic, structures and so forth. Bottom-up processing is not only difficult but it is also inefficient. Yet many language disordered children process speech in this way because they do not know the language or rules of communication well enough to develop top-down processing strategies.

Children with behavioral and social-interactive problems, such as the autistic, have particular difficulty understanding speech because they do not take advantage of situational and contextual factors to aid them in comprehension. Their poor social-interactive skills usually make them unresponsive to communicative behaviors that help to make the association between the speech signal and its referent more salient (e.g., mutal referencing behaviors, such as pointing). The result is that in order to comprehend speech, many autistic children must rely primarily on the information in the speech signal. The fact that many of these children also suffer from cognitive deficits serves to compound the problem that these children have understanding language. One can imagine many of these children tuning out speech and withdrawing further into themselves in reaction to their inability to understand speech. Moreover, even if an autistic child had the necessary cognitive and attentional skills to comprehend speech, a lack of motivation to respond or a lack of knowledge how to respond might cause the child not to acknowledge that he understood what was said.

Production of Speech-Language

Given the frequency of echolalic responses in the speech of autistic children, it is also important to have some familiarity with the stages and

BEST COPY AVAILABLE

components in the speech production process. The first stage involves the formulation of the message content, i.e., the idea, or proposition to be talked about. Once the message has been formulated, the next step is to plan the type of discourse to be used according to the types of listeners involved, the situational context, and the intent of the communicative act. Once this is done, then one must retrieve the words to be used in the sentence and assign the appropriate phonologic, syntactic, and semantic structure to these words. The "sentence plan" which now contains all the relevant phonological, lexical, syntactic, and semantic information, is then transmitted to the articulators. The final step is to produce or execute the sentence plan. It should be apparent that, like comprehension, speech production is a complex series of events and, more importantly, that difficulties in speech production can be caused by any number of factors. With regard to autistic children, it is generally found (e.g., Baltaxe & Simmons, 1981) that they encounter the most difficulty in the first two stages in the speech production process: formulating messages and taking pragmatic factors into account. They seem to have little difficulty actually articulating the sentence plan.

Bases of Language

The knowledge that language consists of different domains that, in turn, have receptive and productive aspects enables one to appreciate the diversity that exists in the types of language disorders that children can present. Recent studies involving autistic children (Baltaxe & Simmons, 1981; Prizant, 1982) have in fact documented considerable variability in these children's language performance. In addition to being able to describe accurately the different levels of language performance of these children, one must also have some knowledge of the forces that influence the perception, comprehension, and production processes involved in language and language development.

Language performance is influenced by four forces: 1) biological forces, 2) cognitive forces, 3) psychosocial forces, and 4) environmental forces. These forces interact in complex ways in the language acquisition process. Moreover, the way in which these forces interact in a particular child determines the types of language behaviors or deficits this child will present. Thus, not only must one be able to describe the language behaviors of individual autistic children, but one must also have procedures to evaluate the influence of biologic, cognitive, psychosocial, and environmental forces in each child's development.

Summary

I have spent some time outlining the areas that should be evaluated in the assessment of autistic children's language abilities. Effective language intervention depends, in part, on the ability of the interventionist to determine a child's level of functioning in these areas. For example, one must decide if the child is cognitively and socially ready to use a representational system for communication. Some children might be functioning at such a low level cognitively that to teach language would more than likely cause only frustration and failure. Other children might not possess the social-interactive skills or motivation to interact necessary for communication to occur. Language training which merely requires verbal responses in highly structured contrived situations will meet with little success for children who show severe cognitive or social delays. For some of these children, it might be better to begin with a nonverbal system of communication.

In the next part of our presentation, Lauren will discuss in more detail some current approaches to language intervention with the autistic and present some specific suggestions for intervention using a few clinical examples.

COMPARISON OF TRADITIONAL AND COMMUNICATIONS BASED INTERVENTION PROGRAMS

Traditionally, language intervention programs have employed behavior modification procedures and have focused on the establishment of verbal responses through sound, word, and sentence imitation. Such programs, when used with autistic children, have been successful in some respects and dismal failures in other respects. In general, traditional behavioral programs have been able to establish verbal imitation, labeling, use of grammatically correct sentences, and limited conversational skills. However, these gains in linguistic skills have not been maintained after removal of external reinforcement, nor have they been generalized to situations outside the immediate training environment. Autistic children, in particular, tend to respond to irrelevant properties of the training stimuli and to develop verbal behaviors which are restricted to the specific training situation (Lovaas, 1977). In the following presentation, I will suggest that the limitations of traditional behavioral intervention programs are due to (1) a failure to consider the cognitive and social-motivational bases of language and (2) a failure to distinguish among speech, language, and communicative skills. Further, I will suggest that an intervention program which teaches language in context - a context that includes the cognitive and social bases as well as communicative functions of language - can circumvent some of the problems of traditional behavioral approaches.

As previously noted, one reason for the limited success of traditional language intervention programs may be a failure to recognize the distinction among speech, language, and communication. The use of speech does not necessarily entail the use of language or the occurrence of communication. The occurrence of communication does not necessarily entail the use of language or speech. Communication is the more general term and is used to refer to

the intentional transmission of information from one individual to another (Ricks & Wing, 1976). Communication may be accomplished verbally through spoken language, written language, or sign language, or non-verbally through gesture, facial expression, eye contact, or body posture. Language refers to the use of arbitrary symbols to represent concepts or ideas. These symbols occur in systematic relationship to each other as specified by the rules of grammar. The symbols used in language may be spoken, written, manual signs, or other arbitrary symbol systems.

Autistic children not only have difficulty learning to use words to refer to concepts and ideas and to combine words in sentences, they also have difficulty learning to communicate with words. One mother described the communicative problems of her child in the following passage from the book The Siege (Park, 1982, p. 74).

> There was another peculiarity of her language that went far beyond its sparseness. Elly spoke words, though not often. But she did not use them to communicate. She had no idea of language as a tool that could cause things to happen. By the time she was two and a half, there were several more words to add to the record. A few were simple nouns like "book," "pin," and "milk." Others were sounds referring to activities, like the "there she is!" intonation with which she responded to the peekaboo game in which I had finally succeeded in interesting her. But not one of these words was ever used, as distinguished from merely spoken. If Elly saw me, she might or might not say "mama." She would never use the name to call me. She might possibly say "teddy" if he appeared. She would never ask for him by name.

Traditional intervention programs have focused on developing a repertoire of verbal responses while ignoring the communicative problems of autistic children. This could be one reason for the limited success of traditional approaches. Children have no reason to maintain or generalize verbal responses which serve no communicative purpose.

Another possible reason for the limited success of traditional approaches is a failure to consider the social-motivational and cognitive bases of

language in designing intervention programs. The social-motivational and cognitive bases of language are closely related to the use of language as a tool for communication. Baltaxe and Simmons (1981, p. 304) suggested that pragmatic or communicative competence "can be understood as the interface between social, cognitive, and linguistic development." It follows that problems with communication may be related to general cognitive and social deficits.

Autistic children's inability to use speech and language for purposeful communication, as a means to some end, may reflect a general deficit in goal-directed or means-end behavior (Schuler, 1980). If an autistic child does not use direct action to manipulate the environment or to accomplish specific goals, then he or she is unlikely to use language as a means to manipulate the environment. Autistic children's failure to use language in interacting with other persons may reflect a general deficit in social-interactional skills. If an autistic child has no need or desire to interact with other persons, and does not do so non-verbally, then he or she has no reason to learn language as a tool for communicating with others. In order to develop language as a means for communication, language that will be generalized and maintained, language intervention programs may first have to address the basic deficits in intentional behaviors and social-interactional skills.

A Communication-Based Approach

We propose a communication-based approach which encompasses the communicative functions as well as cognitive and social bases of language as an alternative to traditional language intervention programs. This program corrects the weaknesses of traditional intervention programs while maintaining those elements, such as the use of systematic, structured training procedures

and clear-cut reinforcing consequences, which have proved beneficial. The basic promises of the communication-based approach are the following:

1. Structured training procedures are necessary for the development of language and communicative skills in autistic children; however, structured training can and should be provided within the context of the child's usual daily activities.

2. Clear-cut reinforcing consequences are desirable, but these consequences should be related naturally rather than artifically to the child's responses.

3. Communicative skills, rather than speech and language skills, should be the primary focus of intervention. When necessary the use of nonvocal or limited communication systems should be considered.

4. The cognitive and social-motivational bases of language and communication should be considered in selecting goals for intervention. In some instances it may be desirable to train prerequisite cognitive and social skills before beginning a language intervention program.

If a child does not learn language in its natural context, then more direct and structured training procedures are appropriate. However, the use of structured training procedures does not imply that communication skills should be taught in a highly controlled situation outside of the child's normal environment. Since autistic children tend to associate newly acquired skills with the initial learning situation, these situations must be as natural as possible. Training should be provided in the context of the child's usual play, feeding, and work activities. Similarly, the issue is not whether clear-cut reinforcing consequences should be provided, but what the nature of these consequences should be. If a child says "car," should he or she receive a raisin for correctly labeling a picture, or should he or she receive a toy car to play with? In the first case, reinforcing consequences are artificially associated with the response, whereas in the second

case the reinforcing consequence is a natural outcome of the child's use of language.

While the training environment and nature of reinforcing consequences may be somewhat different in the communication-based approach, the most significant differences are related to the goals of intervention. Traditional approaches focus on the development of a repertoire of verbal responses through sound, word, and sentence imitation. In contrast, the communication-based approach focuses on the development of communicative skills and on the development of cognitive and social skills which may be prerequisites for the development of language and communication. This is an important difference which reflects a recognition of the complex interaction among cognitive, social, and linguistic knowledge in the development of language and communication skills.

A communication-based approach to the development of communicative skills has several important implications for the design of intervention programs. First, the focus on developing communicative skills rather than on speech and language skills is consistent with the use of alternative communication systems. Communicative skills may be established more rapidly by employing responses already within a child's behavioral repertoire. Developing complex vocal responses may require extensive training which might overly frustrate the autistic child. Second, rather than teach only the referential functions of language (e.g. labeling objects), other more communicative functions of language can be taught (e.g. directing others' behavior, requesting objects, or expressing intentions). Finally, not all children have the necessary social or cognitive prerequisites for learning language. Attempting to teach these children speech and language skills will prove unsuccessful at best and probably will be frustrating for the child and teacher. However, if the

BEST COPY AVAILABLE

focus of training is on communication and its social-cognitive prerequisites, then there are at least two other options: 1) teaching a more limited communication system that enables the child to communicate basic needs and desires, or 2) teaching the necessary prerequisite social interactional and goal-directed behaviors. Because the communication-based approach encompasses the communicative functions as well as cognitive and social bases of language, clinicians and teachers using this approach have greater flexibility in meeting the needs of individual children.

The general premise of a communication-based approach to the development of language and communicative skills in autistic children has been discussed in the previous section. In the next part of this presentation, differences between traditional approaches and the communication-based approach will be illustrated by comparing intervention goals for different autistic children.

Intervention Goals

One of the difficulties in designing intervention programs for autistic children is that autistic children do not represent a homogeneous group. Some autistic children are nonverbal, others are limited to single words or imitative speech, while still others are able to produce sentences but have difficulties with interpersonal communication. Therefore, in this presentation we will consider how intervention procedures might vary based on the cognitive, social, and language abilities of these children. In the time remaining I will provide some specific suggestions for language intervention with different autistic children.

Nonverbal Autistic Children

The group of nonverbal children includes children who seldom or never vocalize and children whose vocalizations are nonmeaningful. Traditional

language intervention programs usually attempt to teach these children to imitate speech sounds and words. The general goals for nonverbal children from a traditional perspective are summarized below.

Goals for Nonverbal Children - Traditional Approach

1. Increase the occurrence of spontaneous vocalizations through reinforcement.
2. Develop nonverbal imitation skills through shaping, prompting, and reinforcement.
3. Develop verbal imitation skills after nonverbal imitation is established through similar procedures.

As illustrated by these general goals, traditional intervention programs emphasize speech development with nonverbal children. In contrast, the communication-based approach emphasizes the development of communicative skills, verbal or nonverbal, and the development of prerequisite social and cognitive behaviors. Several general goals for nonverbal children from a communication-based perspective illustrate this emphasis.

Goals for Nonverbal Children - Communication-Based Approach

1. Develop intentional, goal-directed behaviors such as grasping or reaching for objects, approaching other people or objects, and vocalizing to get attention.
2. Develop the use of a pointing or indicating gesture as a means for communicating wants or needs.
3. Develop symbolic play skills with meaningful objects such as dishes, dolls, doll furniture, and toy cars.
4. Develop social-interactive skills such as a means for initiating interaction (showing a toy, touching, or approaching), and responses to the initiations of others (eye contact, or turn-taking).
5. Consider the use of a nonvocal system of communication if the child does not vocalize spontaneously or does not attend to the speech of others.

The general goals listed above provide greater flexibility in designing an intervention program for individual children and address the problems that

autistic children have with social interaction, means-end behavior, and the use of gestures (Ricks and Wing, 1976; Prizant, 1982).

Echolalic Children

Echolalic children include those children whose speech is generally limited to the meaningless repetition of words or groups of words just spoken by another person. The traditional and communication-based approaches to these children reflect two different views of echolalia. The traditional view is that echolalia is an abnormal behavior which should be eliminated and replaced by more appropriate linguistic behaviors. The second view is that echolalia may represent a different language acquisition strategy, may serve different functions for the autistic child, and should be exploited in therapy programs rather than eliminated.

The goal of traditional language intervention programs is to teach the child when it is appropriate to imitate and when it is not appropriate to imitate. In the context of such a program the child is taught to imitate only the verbal prompts presented during training. Imitation during spontaneous interactions would be inappropriate (Lovaas, 1977).

Prizant and Duchan (1981) suggest that it may be a mistake to eliminate echolalia in spontaneous interactions since echolalia can serve a number of different functions for autistic children. Echolalia may be a means for social interaction or turn taking, for self-regulation, for answering, and for requesting. Rather than eliminate echolalia, these authors suggest that the goal should be to modify and expand the child's echolalic utterances and to incorporate them into functional communicative contexts. One way to accomplish this is to use two adults in a training session. One adult serves as an interlocutor who converses with the child and the other serves as a

prompter who provides appropriate responses for the child to imitate (Philips & Dyer, 1977).

Single-Word Stage

The intervention goals for the traditional and communication-based approaches to language intervention also differ for children who are using single words. The general goal of the traditional approach is to establish a basic vocabulary of nouns and verbs (Lovaas, 1977). More specific goals are presented below.

Goals for the One-Word Stage - Traditional Approach

1. Teach the child to identify objects and to perform actions in response to noun and verb labels.
2. Teach the child to use noun and verb labels to name objects and actions, and to respond to questions such as "What is that?" and "What are you doing?"
3. Teach the child to ask the question "What is it?" about objects in the environment.

The general goal of the communication-based approach for children in the one-word stage is to teach nouns and verbs as means for requesting objects and regulating actions. Further, this approach emphasizes conceptual skills and the need to develop basic categories of objects and actions to facilitate generalization of responses. Several general goals are presented below.

Goals for the One-Word Stage - Communication-Based Approach

1. Teach the child to use nouns and verbs to request objects and regulate actions.
2. Teach the child to ask the question "What is that?" to seek information about objects in the environment.
3. Teach the child to match perceptually similar and functionally similar objects as a means for developing categorization.

As illustrated above, both the traditional and the communication-based approach emphasize the importance of teaching children to seek information

BEST COPY AVAILABLE

by asking questions. The major difference between the two approaches in the one-word stage is the emphasis on labeling in the traditional approach and the emphasis on functional communication in the communication-based approach. We must remember, however, that noun and verb labels are always spoken words in the traditional approach, whereas these labels may be manual signs or other arbitrary symbols in the communication-based approach.

Older Children and Adolescents

Even when autistic children reach the stage where they are using words in sentences, a number of language and communication problems still remain. Both the traditional and communication-based approaches to language intervention address the problems of older children and adolescents. The traditional approach focuses primarily on problems with sentence structure and use of grammatical markers to indicate tense, aspect, and possession among others, Conversational skills generally are not systematically dealt with. The communication-based approach also considers problems with sentence structure and grammar, but primarily focuses on problems with interpersonal communication. The general goals of the traditional approach are presented first.

Goals for Older Children - Traditional Approach

1. Teach the child basic word order rules to facilitate the use of words in sentences.
2. Teach the child the subtle "nuances" of grammar such as adjective-noun relationships, subject-verb relationships, and use of grammatical markers.
3. Teach the child to respond to simple social questions such as "How are you?" and "What's your name?"
4. Teach the child to ask simple questions such as "Is this a table? and "Is this a chair?" as a means to initiate conversation.
5. Teach the child to provide extended answers (spontaneity training) to questions such as "What did you have for breakfast?"

Of these general goals the most interesting training procedures are those associated with training conversational skills and spontaneity. The following conversation, taken from Lovaas (1977, p. 74) illustrates the training of conversational skills.

E	Ricky, what's your name?
Ricky	Ricky.
E	That's right.
Ricky	How are you feeling?
E	No. Ask me what I asked you. Ricky! Say what's your name?
Ricky	Ricky.
E	No. Say, what's. . .
Ricky	What's (pauses). . .
E	Your. . .
Ricky	Your (pauses). . .
E	Say, name.
Ricky	Name.
E	Now, say it all together.
Ricky	What's your name?
E	Joan. Good boy, Ricky. That's good. That's good.

While the result of such training might be a superficially useful skill, this is precisely the kind of training situation which would be avoided in the communication-based approach. Normal speakers do not begin conversations with the same question every time, nor do they ask for information that is already known.

In spontaneity training children are taught to provide elaborated answers to simple questions. However, as with conversational training, the procedures used ignore basic elements of communication, such as the need to be informative and the need to provide relevant information. Another example from Lovaas (1977, p. 89) illustrates this point.

E	What did you have for breakfast?
Scott	Bacon and eggs, orange juice, and milk. Eggs are yellow, eggs are good. I like the eggs. The bacon is red and white, and I like the bacon.

> Milk is liquid, milk is good, and I like milk. Orange juice is good, O.J. is soft -- no! I had grapefruit. Grapefruit is good. I eat it with a grapefruit spoon, and that's all.

In providing this response the child used correct sentence structure, used different nouns, verbs, and adjectives, and used grammatical markers appropriately. However, any listener who received this reply to a question such as this would think that the child was a little weird. Since a listener would probably know the color of eggs and bacon and already know that milk is liquid, he or she would not expect or want to receive such an elaborate reply. Goals such as these may be particularly inappropriate for autistic children since they often provide listeners with more information than they care to receive about irrelevant topics (Schuler, 1980).

By emphasizing the importance of communicative skills the communication-based approach focuses on the most persistent problems of verbal autistic children. Even when these children have mastered complex linguistic structures, problems with social interaction and interpersonal communication remain as obstacles to a productive and independent life (Prizant, 1982). Two examples from Park (1982) illustrate the difficulties of one autistic adolescent with social interaction.

> Innocent and open, she would hug acquaintances too, regardless of gender, even, perhaps, strangers; she has had to be taught that she should smile and shake hands instead (p. 286).

> Another image: having retrieved her paycheck from the Friday mail, she is standing in line at the bank to deposit it. She is a little too close to the person in front of her, but she holds herself in check, trying not to push forward and succeeding. "Hello Jessy." They know her at the bank; they are nice to her, with the natural niceness of women who work in offices. They do not know much about her, but they know that she is different. A person is different when it is less difficult for her to balance her checkbook than to wait patiently for her turn (p. 283).

These examples exemplify the problems autistic children have with adapting behaviors to particular persons or situations, and conforming to the basic rules of social interaction. The goals of intervention within the communication-based approach address problems with social interaction and interpersonal communication as well as problems in the use of language structures.

Goals for Older Children - Communication-Based Approach

Language Goals

1. Teach the child basic word order rules to facilitate the use of words in sentences beginning with the functional phrases such as more (___), and want (___).
2. Teach the use of several grammatical markers and verbs simultaneously (e.g., is +___ing, was +___ing, can +___, want to ___, etc.) to emphasize the variability of grammatical structures (see Blank and and Milewski, 1981).

Communicative Goals

1. Teach the child some means, either eye contact, using proper names, or some exclamation, to obtain listeners' attention.
2. Teach the child some means, such as head nods, "uh hums," smiles, or other signs of approval, to respond to speakers during conversation.
3. Teach the child to modify his or her behavior in response to listener signs of approval or disapproval.
4. Teach the child to adhere to conventions of conversation such as the need for politeness and the need to use utterances that are appropriate for the social context.
5. Teach the child to switch communicative styles or topics of conversation depending on the listener or social situation.

These general goals address only some of the social interactional and communication problems of autistic children. Once children reach this stage of development clinicians and teachers must be aware of possible problems and attempt to identify those that are most detrimental for the individual child.

Summary

In this part of our presentation, the general outline of an intervention program that approaches language in the context of its communicative functions and social-motivational and cognitive bases was presented. To illustrate the differences between this approach and more traditional language intervention approaches, I have identified possible intervention goals for nonverbal and echolalic autistic children, autistic children who are using single words, and autistic children who are speaking in sentences. In the final part of our presentation, Lacy will suggest some ways in which language and communication intervention can be accomplished in the classroom.

CLASSROOM-BASED LANGUAGE INTERVENTION

Before PL 94-142 became law in 1975, one would have had considerable difficulty finding any mention of a classroom-based language intervention program. During that time, the traditional model of speech-language services was to supplement a predominantly academic curriculum in both regular and special education classrooms. Consistent with this service model was the theoretical model of language disorders which stressed the syntactic, semantic, and phonologic aspects of language rather than the communicative (pragmatic) aspects of language. These services and theoretical models functioned to maintain the previously established division between the domains of special educators and speech-language pathologists.

This division began to dissolve with the implementation of PL 94-142. Also contributing to new collaborative efforts between special educators and speech-language pathologists (SLPs) was a theoretical shift to communication-based language programs that emphasized the social and communicative aspects of language rather than the grammatical appropriateness of speech. These collaborative efforts continue today, as exemplified by this presentation

at this conference. The increasing cooperation between special educators and SLPs has benefited both disciplines. Special educators have become more sensitive to the importance of language and communication skills for academic and cognitive performance and have, with the help of SLPs, learned how to enhance the communicative experiences of the children in the classroom. In the same vein, SLPs have become more aware of children's academic programming and daily routines and have, with the help of the special educator, learned how to devise language programming that takes advantage of the various classroom activities.

In the optimal classroom, the SLP works closely with the special educator in the assessment, planning, and programming of language, communication, and academic goals. The SLP might often demonstrate appropriate language intervention techniques throughout the school day in order to provide a model for the special educator from which to learn. During this time, the SLP is becoming aware of the academic skills of these children and the methods the special educator uses for instruction. By continuing to draw and learn from each others' expertise, the special educator and the SLP become better skilled at teaching handicapped children.

Consistent with the previous sections of this paper, we believe that a classroom-based approach which incorporates the components of the communication-based approach is preferred over other approaches and therapy models. Traditional speech-language therapy with the clinician one-on-one with a child in an often sterile, unnaturalistic environment generally is not as effective as a communication-based therapy approach that is conducted throughout the school day in the classroom and other naturalistic settings (e.g., the playground, cafeteria, gym, etc.) with the cooperation of the

special educator and other individuals who interact with these handicapped children.

The classroom provides countless opportunities for children to learn, practice, and master social and communicative skills. As suggested earlier, it is these social and communicative skills that should be the focus of language intervention for autistic children. Social and communicative skills are the foundation on which improvements in language and cognitive abilities must build. With the help of the SLP, the special educator should organize the classroom to insure that there are many planned situational contexts that encourage children to use social and communicative skills. Leisure play activities involving group cooperation, mealtimes, and small group problem-solving situations all are conducive to social interaction. (See Adler et al., 1982 or Peck & Schuler, 1983, for more specific examples.) In instances in which the SLP might have worked individually with a particular autistic child, these naturalistic situational contexts provide an immediate opportunity for the child to generalize recently acquired language or communication skills.

CONCLUSION

It is our hope that this presentation has provided some guidelines for the assessment and treatment of autistic children's deviant language and communication behaviors. It has been emphasized throughout this presentation that effective language intervention depends on an accurate and comprehensive assessment of language and language-related behaviors. The point was made that autistic children are a heterogeneous group of children who display dissimilar language and cognitive skills. Language intervention, therefore, must be designed with an individual child's strengths and weaknesses in mind. Also emphasized in this presentation was the importance of language

intervention that is communication based rather than structurally/ grammatically based, using non-operant procedures whenever possible. Autistic children must first develop some preliminary social and interactive skills in order to make the language they produce meaningful. Finally, we suggested that an optimal environment for language intervention is the classroom. For this reason, it is our sincere hope that collaborative efforts between SLPs and special educators grow more frequent in the years to come for these efforts are in the best interests of the children we serve.

REFERENCES

Adler, S., King, D., & Hodges, A.L. A Communicative Skills Program for Day Care, Preschool and Early Elementary Teachers. Charles C. Thomas, 1982.

Baltaxe, C., and Simmons, J., Disorders of language in childhood psychosis: Current concepts and approaches. In J. Darby (Ed.), Speech Evaluation in Psychiatry. New York: Grune and Stratton, 1981.

Bettleheim, B., The empty fortress -- Infantile autism and the birth of self. New York: Free Press, 1967.

Churchill, D. Language of autistic children. Washington, DC: V.H. Winston and Sons, 1978.

DeMyer, M. Parents and children in autism. Washington, DC: V.H. Winston and Sons, 1979.

Ferster, C.B. Positive reinforcement and behavioral deficits of autistic children. Child Development, 1961, 32, 437-456.

Kanner, L., & Eisenberg, L. Notes on the follow-up studies of autistic children. In P.H. Hoch & J. Zubin (Eds.), Psychopathology of childhood. New York: Grune & Stratton, 1955.

Lovaas, O.I., The Autistic Child: Language Development Through Behavioral Modification. New York: Irvington Publishers, Inc., 1977.

McLean, J.E., & Snyder-McLean, L. Communication disorders associated with mental and behavioral deviations. In R.J. Van Hattum (Ed.), An introduction to communication disorders. New York: Macmillan Publishing Co., 1980.

Morgan, S.B., Early childhood autism: Cognitive-developmental perspectives. In B. Gholson & T.L. Rosenthal (Eds.), Applications of cognitive development theory. New York: Academic Press, in press.

NSAC Advocate, Washington, DC: National Society for Autistic Children, 1980, 12.

Park, C.C., The Siege. Boston: Little, Brown, and Company, 1982.

Peck, C. & Schuler, A. Classroom-based language intervention for children with autism: theoretical and practical considerations for the speech and language specialist. Seminars in Speech and Language, 1983, 4, 93-103.

Philips, G.M., and Dyer, C., Late onset echolalia in autism and allied disorders. Brit. J. Disord. Comm., 1977, 12, 47-59.

Prizant, B.M., Speech-language pathologists and autistic children: What is our role? Part I. ASHA, 1982, 24, 463-468,

Prizant, B.M., Speech-language pathologists and autistic children: What is our role? Part II. ASHA, 1982, 24, 531-537.

Prizant, B.M., and Duchan, J.F., The functions of immediate echolalia in autistic children. JSHD, 1981, 46, 241-249.

Ricks, D., & Wing, L. Language, communication, and the use of symbols in normal and autistic children. Journal of Autism and Childhood Schizophrenia, 1975, 5, 101-220.

Ricks, D., and Wing, L., Language, communication and the use of symbols. In L. Wing (Ed.), Early Childhood Autism, 2nd Ed., Oxford: Pergamon Press, 1976.

Rutter, M. Definition of childhood autism. In L.A. Lockman, K.F. Swaiman, J.S. Drage, K.B. Nelson, & H.M. Marsden (Eds.), Workshop on the neuro-biological basis of autism (NINCDS Monograph No. 23, NIH Publication No. 79-1855). Washington, DC: U.S. Government Printing Office, 1979.

Schuler, A.L., Aspects of communication. In W.H. Fay and A.L. Schuler (Eds.), Emerging Language in Autistic Children. Baltimore: University Park Press, 1980.